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European Pine Shoot Moth

SURVEY PROJECT

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R E P O R T

EUROPEAN PINE SHOOT MOTH

SURVEY PROJECT

PORTLAND

1963

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DEPARTMENT OF FORESTRY

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TABLE OF CONTENTS

	Page
Introduction	1
Organization	1
Training	2
Survey Procedure	3
Publicity and Cooperation	4
Radio Communication	4
Survey Findings	4
Survey Costs	5
State-Wide Survey	6
Recommendations	6

APPENDIX

Survey Summary	7
Survey Map, 1963 Survey	8
Survey Map, 1961 & 1962 Surveys	9
Summary of Expenditures & Transportation	10
Personnel Organization Chart	11

INTRODUCTION

Timberowners and foresters in Oregon have been concerned with the presence of the European pine shoot moth, (Rhyacionia bouliana Schiff.) since its detection in the Portland area in 1960.

This European Pine Shoot Moth Project was the third in a series designed to eradicate the insect from the Portland area and thus prevent its spread to the valuable Eastern Oregon pine stands.

The 1961 survey resulted in discovery and eradication of nineteen infested pine trees on eight residential properties and infested stock in three commercial nurseries in the Portland area and one in the Salem area.

Complete coverage of the Portland Metropolitan Area from Beaverton to Gresham, and the Columbia River to Oregon City was made in the 1962 survey. Surveys were also made in Forest Grove, Gresham, Hillsboro, McMinnville, Newberg, Salem, Oregon City and St. Helens. Only eighteen trees were discovered, all in the Portland area, on two residential and one business property in the 1962 project. These trees were removed and burned.

The Northwest Forest ~~Pet~~ Pest Action Council, in consideration of the good results of the eradication program to date, recommended that for 1963 an intensive check be made of areas adjacent to previous infestations and the areas where extensive use is made of ornamental pines for landscaping purposes.

Organization

During the winter of 1962-1963 a pine density map of the Portland area was compiled from information gathered during the 1962 project. From a study of the pine concentration and previous infestations as plotted on this map, determination was made to limit the 1963 project to six three-man crews.

A building was rented at 1224 S. E. Spokane St., to be used as a

temporary headquarters. This building was large enough for office space, laboratory, training space, and sleeping rooms for some of the crew members.

The State Department of Agriculture made available 3 men who had either worked as supervisors or crew leaders on previous projects. Two other crew leaders were forest wardens from State Forestry Department districts, and one had been with the survey work since its beginning in 1961. Six of the crew members were recruited from State Forestry tree planting crews, and the remaining members were picked from forestry students and others who had made application for work at the Department's office in Salem.

Due to the better definition of the survey area and the increased experience of the crew leaders, as well as some of the surveyors, it was decided to limit the survey to the period April 1, through May 31st.

Training

A training program for the six crew leaders and twelve crew members, in addition to personnel from State Department of Agriculture and U. S. Agricultural Research Service, was held Monday and Tuesday, April 1 and 2. The first morning was devoted to explaining the reason for the survey and what was expected of the crew members, pine shoot moth identification, tree identification, survey operations, role of the State Department of Agriculture, administration and public relations, and safety. An afternoon session was held at the Hoyt Arboretum for the purpose of pine tree identification . An all day trip was made to Seattle on Tuesday, April 2, to give all the personnel a first hand look at the European pine shoot moth and its damage. After some time spent in a park area examining many infested trees, the crews assembled and made house-to-house examinations as was to be done in the Portland survey. This trip provided very valuable training to all crew members as they learned what to look for in the Portland survey.

Survey Procedure

First priority for the 100% coverage of this year's survey was an area with a 1/2 mile radius around all points where the European pine shoot moth had been found in previous years. After these areas were covered, the crews went into the areas of highest pine concentration and then into areas of lesser concentration. The crews were instructed to contact each homeowner where possible and leave a brochure explaining the project, then thoroughly examine all pine trees for evidence of pine shoot moth. In cases where the homeowner was not at home, a brochure was left and pine trees examined. When a tree was found which was suspected of being infested, clippings were made of the affected twig and placed in a plastic bag, and a record was also made of the location. All collections were delivered to the laboratory where each specimen was critically examined under a binocular microscope to see if shoot moth was present or suspected. Specimen larvae or pupae from each tree which was tentatively identified to be infested were sent to the U. S. National Museum in Washington, D. C. for positive identification. Many twigs were placed in rearing boxes to rear unknown species for future identification and study.

Each crew leader recorded his work progress on a map and reported the number of properties and pine trees examined. A large master map was kept showing progress of each crew, and daily reports were summarized each day and a running total kept of work progress.

The survey was impeded to a degree because of an extended period of rain, and it was found necessary to keep two crews during the first week in June. One crew remained in the Portland area to complete a cross check of some areas as well as some spot surveying in areas of low pine density. The second crew worked in the Salem area completing a 100% survey around the nursery where the infestation was found in 1961.

Publicity and Cooperation

Homeowner cooperation was as exceptional this year as in the past two projects. There were very few complaints from owners of the properties checked during the survey, and when the purpose for the survey was explained all were satisfied. Television, radio, and newspaper coverage played a large part in public acceptance of the program as well as good will created by the crews in the 1961 and 1962 surveys.

Each crew member was provided with an identification card and a green cap bearing a State Department of Forestry emblem. Each crew was provided with a state car. This distinctive apparel and car did much to promote cooperation from the homeowners. County Agents for Multnomah, Washington, and Clackamas Counties were contacted and provided with brochures to aid them in answering local inquiries.

About 100 telephone requests were received during the progress of the survey asking for information on the pine shoot moth and for advice on related pest problems. All were answered to the satisfaction of the homeowner either by telephone or personal contact by the Assistant Project Director.

Radio Communication

Forestry Department radios were installed at the headquarter's office and in all the cars used by the crews. Radio communication aided greatly in coordinating the crews and locating them when field checking.

Survey Findings

Of the 98,411 trees examined during the survey by State Forestry Department crews, 6 trees on 5 residential properties were found to be infested with European pine shoot moth, and all of them were destroyed with the owner's permission. In addition, the Nursery Inspection Service of the State Department of Agriculture, with the cooperation of personnel

from the U. S. Agricultural Research Service, inspected 427 nurseries and 321 retail outlets during the survey, and found 2 infested trees in a nursery in Southeast Portland which were likewise destroyed.

All of the 8 infested trees were found in a relatively small area in Southeast Portland. A tabulation of survey results is shown in the Appendix.

Of the 92 collections made from trees suspected of being infested, biological examination revealed damage caused by the following insects:

Number of Collections	Order	Family	Remarks
46	Lepidoptera	Phycitidae	Dioryctria spp.
20	Lepidoptera	Tortricidae	Various bud miners and defoliators
8	Lepidoptera	Olethreutidae	European pine shoot moth
1	Hymenoptera	Diprionidae	Sawflies
6	Diptera	Itonididae	Pitch midge
11			No insect damage
92			

Significant was the fact that 50% of the collections showed extensive damage consisting of mined buds and branches caused by native tip moths of the family Phycitidae, primarily the Zimmerman pine moth, Dioryctria zimmermani. The second associated insect most commonly encountered was the orange tortrix, Argyotaenia citrana, family Tortricidae, the larvae of which were observed to feed at the base of needles on terminal and lateral buds. Confirmation of associated insect species was made by specimens sent to the U. S. National Museum for positive identification.

Survey Costs

A budget of $20,000.00 was approved for this year's project. The amount expended for the survey was $18,097.78. Of this amount 50% was paid by the State of Oregon and 50% by the U. S. Forest Service.

State-Wide Survey

The U. S. Forest Service is continuing this cooperative effort, and crews are making spot checks of pine plantings and native stands throughout the state during the months of July and August.

Recommendations

It is recommended that a further survey be made around the areas where the shoot moth has been found from 1960 through 1963. Probably only a front yard check of the areas of heavy pine concentration, as mapped from the 1962 survey, would be sufficient for the remainder of the Portland metropolitan area. The timing of the survey this year seemed to be satisfactory, although pupation of the insect was found on an infested tree during the last week in May.

The three-man crews worked out very well again this year and it is recommended that this be continued for any future surveys.

A smaller survey could probably be conducted without maintaining an office in the Portland area.

It is recommended that the time and attention be given to further evaluation studies of the Zimmerman pine moth, particularly due to its widespread occurrence and damage caused in the Northwest including the native pine stands of the Oregon coast.

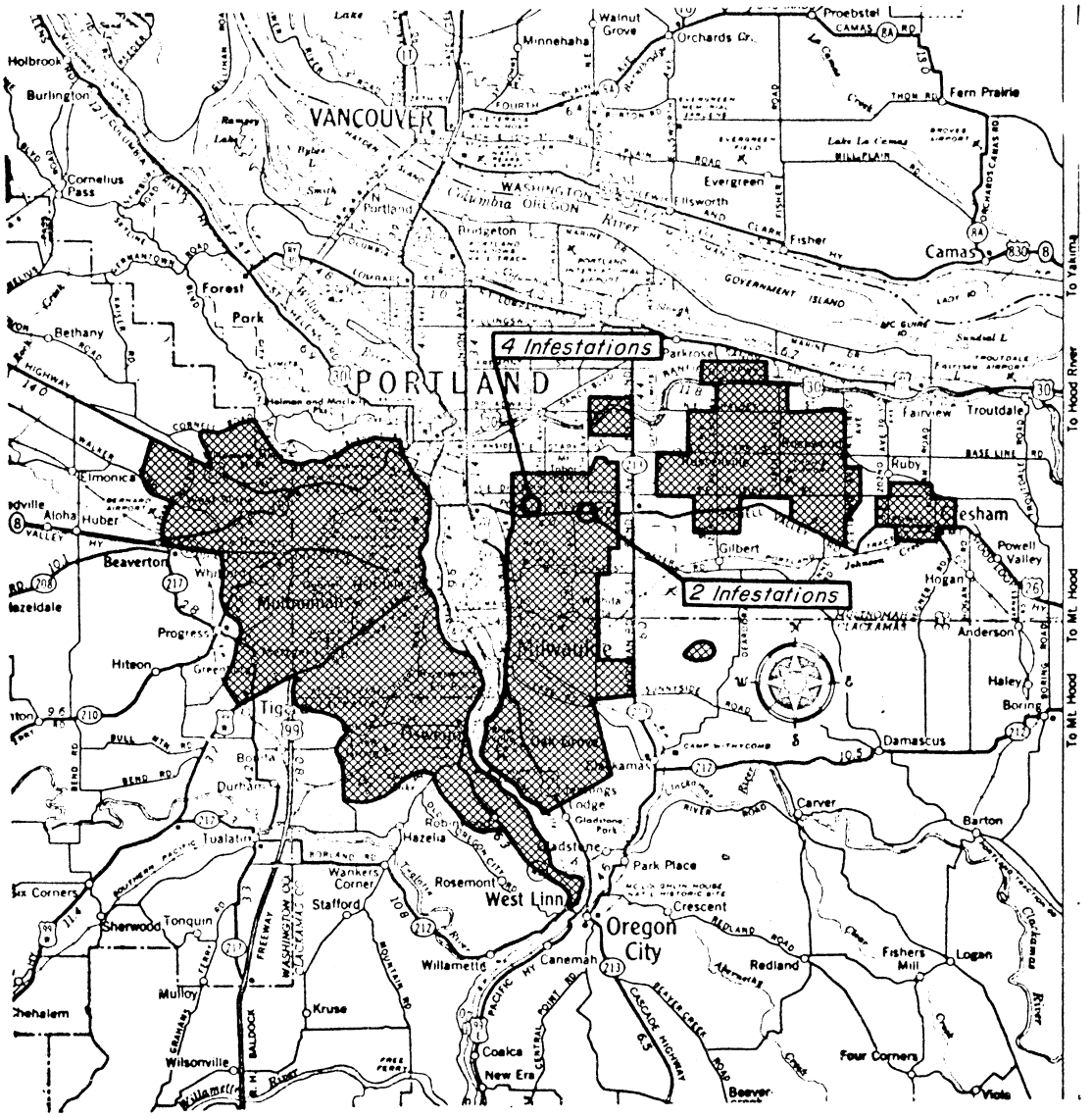
APPENDIX

SUMMARY

PORTLAND EUROPEAN PINE SHOOT MOTH SURVEY 1963

	DATES	SQUARE MILES	MAN-DAYS	NO. OF PROPERTIES	NO. OF TREES	COLLECTIONS	INFESTED TREES
REGULAR PORTLAND SURVEY	4-3-63 to 6-7-63	89	717	66,970	94,576	84	4
OTHER SURVEYS							
Gresham	5-6-63 to 5-9-63	1	12	513	523	1	0
Tigard	5-22-63 to 5-23-63	1	7	583	738	1	0
Salem	6-3-63 to 6-7-63	2	15	2,203	2,047	0	0
RESURVEY AROUND INFESTATIONS	5-23-63 to 5-29-63	2	13	210	527	6	4
TOTALS		95	764	70,479	98,411	92	8
OTHER SURVEY WORK							
Training	4-1-63 to 4-2-63		35				
Destroying Infested Trees	5-14-63		2				
	5-27-63		3				
	6-4-63		2				
TOTAL MAN-DAYS			806				

1963 PORTLAND
EUROPEAN PINE SHOOT MOTH SURVEY



Area Surveyed 1963 ——

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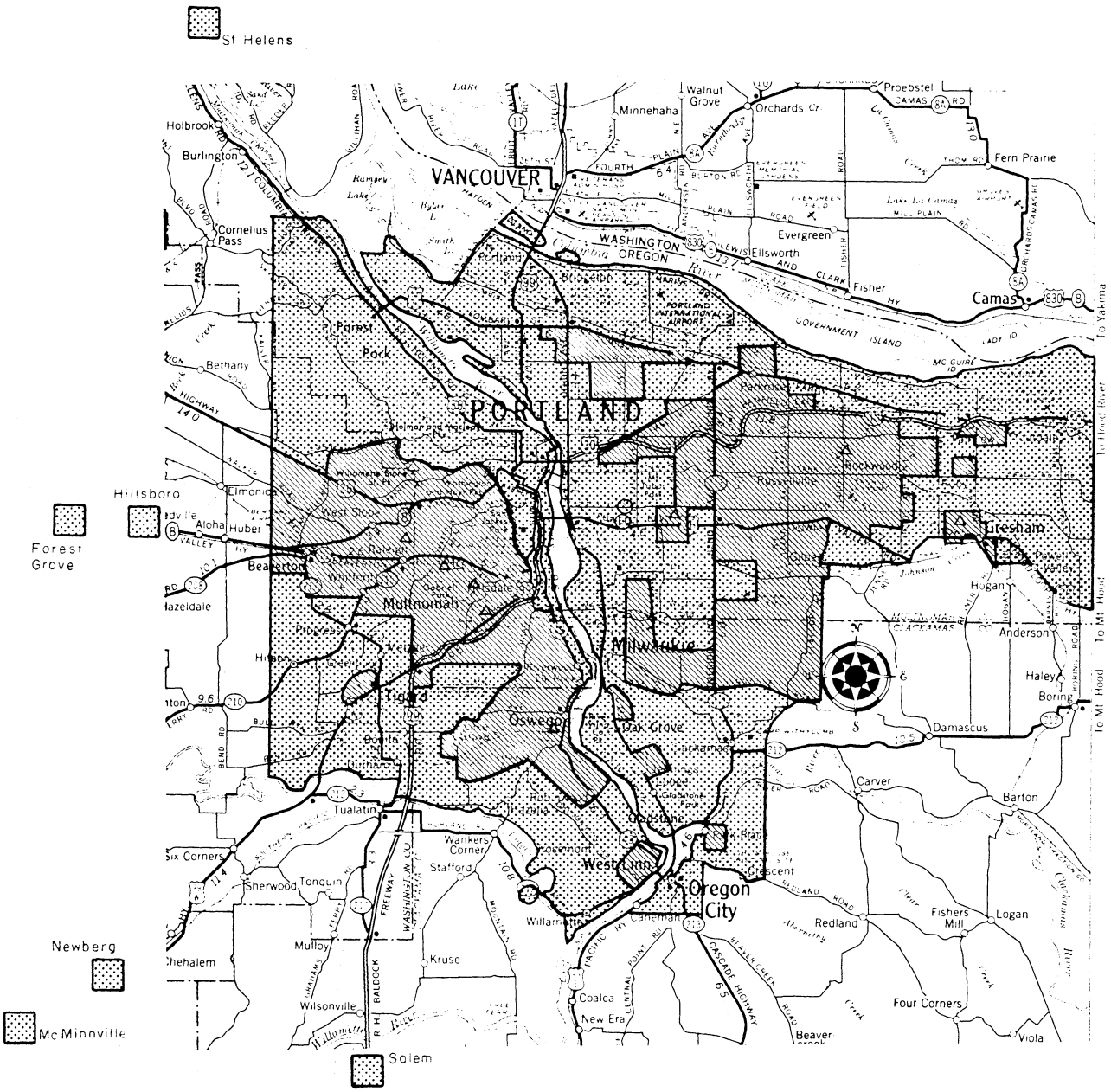
1961 & 1962 PORTLAND
EUROPEAN PINE SHOOT MOTH SURVEY



SUMMARY OF EXPENDITURES

1963 PINE SHOOT MOTH SURVEY

	Expended	Budgeted
Salaries and Wages*	$ 11,410.49	$ 14,933.00
Other Personal Services	660.11	587.00
Other Professional Services		1,300.00
State Dept. of Agriculture	3,321.36	
U. S. Forest Service	438.49	
Materials and Services	2,226.56	3,130.00
Capital Outlay	40.77	50.00
TOTALS	$ 18,097.78	$ 20,000.00

*Does not include salary of a Forester normally assigned to Insect & Disease Control work.

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TRANSPORTATION

Passenger Cars	Miles	Cost
State Forestry	18,563	$1,114.08
State Agriculture	2,488	118.40
Bus & Truck	744	119.04
TOTALS	21,795	$1,351.52

PERSONNEL ORGANIZATION CHART